ABSTRACT

An optical network terminator for terminating and reducing the accumulated noise in ~~an~~ optical ~~network~~ networks, particularly ring based networks. ~~Use of the present invention~~ The terminator eliminates ~~the prior art~~ problems of noise accumulation from ~~ASE~~ amplifier spontaneous emission (ASE), thermal noise, etc., while providing bi-directional communications in the optical network. The optical network may have any topology ~~such as~~ including ring, star, mesh, point-to-point, etc. In the case of an optical ring, the ring is broken and an optical terminator is placed in line therewith. The optical network terminator includes a filter such as an optical demultiplexer/multiplexer or Fiber Bragg Grating (FBG) based filter. ~~The filter functions to each~~ Each individual wavelength of light is filtered and ~~generate~~ a multi-wavelength optical output ~~with~~ is generated whereby the noise accumulation is removed. Each channel is adapted to only pass a band-limited signal around the center frequency corresponding to the wavelengths supported by the particular optical ring network. ~~Equalization of the channels is enabled using~~ Channel equalization uses variable optical attenuators and monitors in line with each channel. Channels currently not in use ~~can~~ may be disconnected from the ring remotely by setting the corresponding optical attenuator to a low enough level.

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